

Remarks:

Claims 1-4, 9-24, and 26-28 are pending in this application. Applicant has amended claims 1, 9-11, and 26-28 and cancelled claims 5-8, 25 and 29-32 to clarify the claimed invention. Applicant respectfully requests favorable reconsideration of this application.

With respect to the objections to the drawings, claim 1 recites that, "a generatrix of the conical surface of said at least one annular gear member has a negative bevel angle relative to a plane perpendicular to an axis of rotation of said at least one annular gear member." Applicant submits that this is what is shown in the drawings. A generatrix is a line on the conical surface of the gear. The relationship of this line with a plane perpendicular to an axis of rotation of the annular gear member is shown in Fig. 6a.

With respect to the length of the hose, the hose has the same length, regardless of whether the hose is straight or bent. In a simplistic analogy, a garden hose has the same length, whether the hose is straight or rolled up for storage. The hose does not grow or shrink as it is wound up or unwound. Figs. 3 and 4 illustrate this.

Claims 29-32 are no longer pending.

In view of the above, Applicant submits that the drawings comply with 37 C.F.R. § 1.83(a) and respectfully request withdrawal of the objection to the drawings.

Applicant has amended claim 10 along the lines suggested by the Examiner. Claim 8 is no longer pending. Accordingly, Applicant respectfully requests withdrawal of the objection to the claims.

The Examiner rejected claims 10, 27 and 28 under 35 U.S.C. § 112, second paragraph. The length of the inner protection hose is discussed above. Applicant has amended claims 27 and 28 to clarify the claimed invention. Accordingly, Applicant submits that claims 10, 27 and 28 comply with 35 U.S.C. § 112, second paragraph, and respectfully request withdrawal of this rejection.

The Examiner rejected claims 1, 2, 5, 6, 8-11, and 24-32 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 4,690,012 to Dahlquist et al. The Examiner rejected claims 3, 4, and 7 under 35 U.S.C. § 103(a) as being unpatentable over Dahlquist et al. The Examiner rejected claims 12-14 under 35 U.S.C. § 103(a) as being unpatentable over Dahlquist et al. in view of U.S. patent 6,734,367 to Haniya et al. The Examiner rejected claims 15-23 under 35 U.S.C. § 103(a) as being unpatentable over Dahlquist et al. in view of Haniya et al. and further in view of U.S. patent 6,390,141 to Fisher.

Dahlquist et al. does not disclose the invention recited in claims 1, 2, 5, 6, 8-11, and 24-32 since, among other things, Dahlquist et al. does not disclose a robot wrist that includes a first wrist part, a second wrist part, and a third wrist part, and at least one annular gear member configured to drive rotary movement of any of the wrist parts relative to another of the wrist parts, the at least one annular gear member having a conical surface, wherein a generatrix of the

conical surface of the at least one annular gear member has a negative bevel angle relative to a plane perpendicular to an axis of rotation of the at least one annular gear member. Rather, as illustrated in Fig. 6b and as described at page 8, lines 17-24, Dahlquist et al. discloses gears inclined at a positive bevel angle.

Dahlquist et al. also does not disclose a robot wrist that includes first, second and third wrist parts, where an axis of rotation between the first wrist part and the second wrist part intersects an axis of rotation between the second wrist part and the third wrist part within a boundary wall of an inner protection hose extending through the robot wrist. Rather, as clearly shown in Figs. 2 and 3, the axes of rotation of the wrist parts intersect outside of an internal passage in which a hose could extend. This is a quite different configuration than the claimed invention.

In view of the above, Dahlquist et al. does not disclose all elements of the invention recited in claims 1, 2, 5, 6, 8-11, and 24-32. Since Dahlquist et al. does not disclose all elements of the invention recited in claims 1, 2, 5, 6, 8-11, and 24-32, the invention recited in claims 1, 2, 5, 6, 8-11, and 24-32 is not properly rejected under 35 U.S.C. § 102(b). For an anticipation rejection under 35 U.S.C. § 102(b) no difference may exist between the claimed invention and the reference disclosure. *See Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q. 841 (C.A.F.C. 1984).

Along these lines, anticipation requires the disclosure, in a cited reference, of each and every recitation, as set forth in the claims. *See Hodosh v. Block Drug Co.*, 229 U.S.P.Q. 182

(Fed. Cir. 1986); *Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986); and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

Dahlquist et al. does not suggest the invention recited in claims 3, 4, and 7 since, among other things, Dahlquist et al. does not suggest a robot wrist that includes a first wrist part, a second wrist part, and a third wrist part, and at least one annular gear member configured to drive rotary movement of any of the wrist parts relative to another of the wrist parts, the at least one annular gear member having a conical surface, wherein a generatrix of the conical surface of the at least one annular gear member has a negative bevel angle relative to a plane perpendicular to an axis of rotation of the at least one annular gear member. As noted at page 8, lines 28-34, the negative bevel angle results in an increased internal diameter of the wrist section. This can reduce contact with the protection hose and/or any electrical lines or supply lines, for example, running through the wrist. This can also result in removed and/or reduced obstacles that can hinder free bending of the protection hose. As a result, the protection hose and/or any lines running through the wrist will experience reduced wear. This can result in an increased life span, reduced costs and down time for repairs. Dahlquist et al. does not suggest a negative bevel angle. Therefore, Dahlquist et al. does not suggest the invention recited in claims 3, 4, and 7, which depend from claim 1 and recite aspects of the negative bevel angle. Dahlquist et al. also does not suggest a robot wrist that includes first, second and third wrist parts, where an axis of rotation between the first wrist part and the second wrist part intersects an axis of rotation between the second wrist part and the third wrist part within a boundary wall of an inner protection hose extending through the robot wrist.

The combination of Dahlquist et al. and Haniya et al. does not suggest the invention recited in claims 12-14 since, among other things, Haniya et al. does not overcome the above-discussed deficiencies of Dahlquist et al. Along these lines, Haniya et al. does not suggest a robot wrist that includes a first wrist part, a second wrist part, and a third wrist part, and at least one annular gear member configured to drive rotary movement of any of the wrist parts relative to another of the wrist parts, the at least one annular gear member having a conical surface, wherein a generatrix of the conical surface of the at least one annular gear member has a negative bevel angle relative to a plane perpendicular to an axis of rotation of the at least one annular gear member. Haniya et al. also does not suggest a robot wrist that includes first, second and third wrist parts, where an axis of rotation between the first wrist part and the second wrist part intersects an axis of rotation between the second wrist part and the third wrist part within a boundary wall of an inner protection hose extending through the robot wrist. The Examiner cited Haniya et al. as suggesting a protective hose. However, the cable protective spring suggested by Haniya et al. does not suggest the aspects of the gearing recited in claim 1, from which claims 12-14 depend. Therefore, any combination of Dahlquist et al. and Haniya et al. would still not suggest the aspects of the claimed invention not suggested by Dahlquist et al. Accordingly, the combination of Dahlquist et al. and Haniya et al. does not suggest the invention recited in claims 12-14.

The combination of Dahlquist et al., Haniya et al. and Fisher does not suggest the invention recited in claims 15-23 since, among other things, Fisher does not overcome the above discussed deficiencies of the combination of Dahlquist et al. and Haniya et al. Along these lines,

Fisher does not suggest a robot wrist that includes a first wrist part, a second wrist part, and a third wrist part, and at least one annular gear member configured to drive rotary movement of any of the wrist parts relative to another of the wrist parts, the at least one annular gear member having a conical surface, wherein a generatrix of the conical surface of the at least one annular gear member has a negative bevel angle relative to a plane perpendicular to an axis of rotation of the at least one annular gear member. Fisher also does not suggest a robot wrist that includes first, second and third wrist parts, where an axis of rotation between the first wrist part and the second wrist part intersects an axis of rotation between the second wrist part and the third wrist part within a boundary wall of an inner protection hose extending through the robot wrist. The Examiner cited Fisher as suggesting a hose made of certain materials. Even if the combination of Dahlquist et al. and Haniya et al. suggested a hose made of the materials suggested by Fisher, the combination would still not suggest the aspects of the gearing recited in claim 1, from which claims 15-23 depend. Therefore, any combination of Dahlquist et al., Haniya et al. and Fisher would still not suggest the aspects of the claimed invention not suggested by Dahlquist et al. or the combination of Dahlquist et al. and Haniya et al. Accordingly, the combination of Dahlquist et al., Haniya et al. and Fisher does not suggest the invention recited in claims 15-23.

In view of the above, the references relied upon in the office action do not disclose or suggest patentable features of the claimed invention. Therefore, the references relied upon in the office action do not anticipate the claimed invention or make the claimed invention obvious. Consequently, Applicant submits that the claimed invention is patentable over the cited references. Accordingly, Applicant respectfully requests withdrawal of the rejection based on the cited references.

In conclusion, Applicant respectfully requests favorable reconsideration of this application and issuance of the notice of allowance.

If an interview would advance the prosecution of this application, Applicant respectfully urges the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge fee insufficiency and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

Date: April 7, 2011

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